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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,969	05/05/2005	Walter Dobler	12810-00084-US	9630
23416	7590	02/07/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP			WITHERSPOON, SIKARL A	
P O BOX 2207			ART UNIT	PAPER NUMBER
WILMINGTON, DE 19899			1621	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The instant claims are drawn to the preparation of ionones by reacting the pseudoionones obtained from the process of claims 1 and 15, respectively; however, the claims do not recite with what compound(s) and under what conditions the pseudoionones are reacted, thereby rendering the claims indefinite.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gradeff (US 3,840,601) in view of Janitschke et al (US 4,431,844) and Mitchell (US 4,874,900).

The instant claims are drawn to a process for preparing pseudoionones (formula I) by reacting an aldehyde (formula II) with a ketone (formula III), in the presence of

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water and an alkali metal hydroxide, and then reacting the pseudoionones thus formed with sulfuric acid in the presence of a diluent to form ionones (formulae IV to VI).

Gradeff teaches a process wherein citral and methyl ethyl ketone are condensed to produce upon dehydration pseudo iso-methyl ionone, which is subsequently cyclized to form methyl ionone (col. 3, lines 29-47). The catalyst for the condensation is potassium or sodium hydroxide or an alkoxide (col. 6, lines 54-56). The cyclization is carried out using phosphoric acid or sulfuric acid-acetic acid mixture (col. 7, lines 32-40).

Janitschke et al teach a process for preparing pseudoionones by condensing an aldehyde with acetone or methyl ethyl ketone at a temperature from 25 to 75° C and residence time of less than 45 minutes, in the presence of 0.005 to 20% by weight of sodium hydroxide or potassium hydroxide. The reaction mixture is worked up by distillation of the ketone during which a certain amount of water is distilled off. Unreacted aldehyde and ketone can be reused for the reaction. The yield of pseudoionone produced is up to 95% based on 100% pure aldehyde employed, or up to 100% based on the aldehyde reacted. Example 1 shows that when acetone is used as reactant, it contains water and also teaches cooling of the reaction mixture under reduced pressure (col. 4, line 34 to col. 7, lines 56).

Mitchell teaches a process for making pseudoionone by condensing acetone and citral in the presence of sodium hydroxide and water (col. 5, lines 53-59).

The differences between Gradeff and the instant claims are that Gradeff does not expressly teach the presence of water in the reaction, does expressly teach the step of

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cooling the reaction mixture prior to removing the ketone product, does not expressly teach that the ketone starting material has a water content, and does not teach the specific amount of catalyst present in terms of weight percentages, as recited in the instant claims.

The references cited in addition to Gradeff all represent known processes for producing pseudoionones by the condensation of an aldehyde and a ketone in the presence of an alkali hydroxide, and subsequent cyclization/hydrolysis of the pseudoionone in the presence of an acid to produce the corresponding ionone compound. As can be seen from what the examiner has stated the references teach, each of the additional references describes limitations that make up for the deficiencies in Gradeff. Since the cited references represent or constitute well established processes for producing pseudoionones and/or ionones, the examiner contends that it would have been obvious for a person of ordinary skill in the art, at the time the present invention was made, to combine the aforesaid reference teachings, with the reasonable expectation of conducting an efficient process for making pseudoionones and/or ionones, based on the combination of steps that afforded optimal results in each individual process. Therefore, the combination of the above references renders the instant claims obvious.

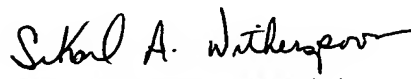
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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SIKARLA A. WITHERSPOON  
PATENT EXAMINER